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THE IDEOLOGICAL BACKGROUND OF THE FOUNDATION OF MATHEMATICS

A. Principles of duality and polarity.

1. Ordinary language is a mixture of two terminologies: a terminology of *causality and matter* ("it-language") and a terminology of *finality and affect* ("I-language"). Both languages are reducible to a unitarian micro-physical or micro-psychological terminology (*principle of linguistic duality*).

2. The psychic correlate of linguistic duality is to be found in the structural differences between *perceptions* and *impulses* (*principle of mental duality*).

3. In the use of both terminologies may be observed: on the one side a tendency to the expression of general and abstract concepts and on the other a tendency to the formulating of restricted and concrete ideas (*principle of linguistic polarity*).

4. The psychic correlate of linguistic polarity is to be found in the continual and irresistible pulsation of our sphere of attention and interest (*principle of mental polarity*).

B. Graduality of the ideological and mathematical mental attitudes.

5. The neglecting and overlooking of the mutual reducibility of it-language and I-language and of the graduality of psychological distinctions has given rise to several *pseudo-problems*, i.e. to problems about propositions, that by transformation in a unitarian terminology prove to be reducible to mere tautologies. Some of these are purely terminological (*real pseudo-problems*), while others are to be regarded as imperfectly formulated problems of moral, social or epistemological character (*unreal pseudo-problems*).

6. To the epistemological pseudo-problems belong most controversies about general ideas like reality, objectivity, existence, psychophysical parallelism the origin of life, free will and so on, and

more particularly those about the foundation of mathematics as a system of abstract and eternal truths.

7. The problems of formalized and axiomatized mathematics and of symbolic logic, being reducible to tautologies without any terminological transformation, cannot be called pseudo-problems but are to be designed as *formal problems*. The validity of the corresponding propositions is bounded by the acceptance of the *principle of identity* (a = a) and their applicability on empirical results by the degree of constancy of our mental images and of *parcelability* (dividing and uniting) of our sphere of attention.

8. As for mathematics in the wider sense of rational and scientific mental attitudes, these find their expression in a more or less mixed terminology enabling and facilitating a gradual transition to ideological forms of expression and mental attitudes.

C. *Correlation of fundamental conceptions with group tendencies.*
9. The phenomenon of mental pulsation reveals itself in different aspects of individual and group life. Between many of these aspects correlations are traceable and more especially the selfmaintaining and aggressive group tendencies on the one hand and the adapting and cooperating tendencies on the other (phenomena of *social parcelising*) seem to correlate with the predomination of absolutistic or relativistic (dualistic or monistic) conceptions about the foundation of ideological and rational linguistic systems and mental attitudes.

10. In some features of cultural history these correlations are more obvious than in others, as for instance in the philosophical systems of Lao-Tse, the Upanishads and Buddhism, opposite to those of Kong-Fu-Tse (worshipping of authority) and Brahmaism (caste-system), or in the antitheses of sophism and platonism in the Greec world and of oldest Christianity and orthodox exegetism in the Hebrew world. And yet more obvious perhaps in the social backgrounds of the reformation, of encyclopaedism and of marxism.

11. With respect to the present cultural period, the synchronism of serious scientifical and epistemological crises (as: the breaking down of the absolute validity of Euclidean geometry, Newtonian physics and Aristotelean logic) with far-reaching social and political changes and vehement collisions may point to the underlying of common masspsychological factors, but the deficiency of distance and perspective makes it difficult to lay bare the corresponding connexions and correlations. It may be hoped that the rapid development op so many modern methods of conceptual investigation

(logical empiricism, general semantics, many valued logic, analytical and synthetical significs, the introduction of micro- and meta-languages, mathematical theory of communication, Gallup gauging, value analysis, cybernetics, etc., etc.) will furnish the means to arrive at better justified results in this field of research.

12. Resuming we may say that ideological and rational mental attitudes cannot be studied without taking into account their continuous interaction. And that for this reason no satisfactory and coherent science-of-man is possible that pays no regard to both of these "pôles of human nature".

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